



CATALOGUE – APRIL 2019

ALL PRICES INCLUDE GST, ARE VALID AS OF 15/04/2019 AND ARE SUBJECT TO CHANGE WITHOUT NOTICE



Above: Another proud owner of an MTS 48

Right: New Maxitrak EM Baldwin Cane Loco

International enquiries welcome!
Mini Train Systems ships and
installs around Australia and
around the World.

NEW IN THIS ISSUE

- **Maxitrak Australian Baldwin Cane Loco for 5" Gauge**
- **MRC/MBC/BPV Scale Riding Cars**
- **MLE/UME Scale Flat Cars**
- **New Compact Point Throws**
- **New PS7D Sound Ready Power Controllers**
- **Coupling Bars and Coupling Pockets**



In the UK and Europe, MTS Products are available through Maxitrak

Welcome to the New Streamlined Mini Train Systems Catalogue!

As well as adding many new and improved 5" and 7 ¼" gauge products, we've changed the layout of this edition so you can get to the heart of what you're after quicker.

Section 1: Starter Locos – Page 4

Small 5" gauge locos typically intended to haul a single passenger car on home tracks or public running on small club tracks. Great to put in the back of the car when you want to go out and have a run.



Section 2: Passenger Haulers – Page 7

5" and 7 ¼" gauge locos designed to pull at least two passenger cars for running on more demanding home railways and at clubs.



Section 3: Heavy Haulers – Page 17

More powerful locos intended to pull 4 or more 5" straddle cars and similar weights of 7 ¼" cars. Many of these locos have become the backbone of public running at clubs around Australia.



Section 4: Passenger Cars, Gardening Wagons and Scale Wagons – Page 25

Straddle 5" and 7 ¼" passenger cars, enclosed sided 7 ¼" gauge passengers, special cars for gardening use and our new scale model riding and running cars including the NSWGR MRC and UME wagons.

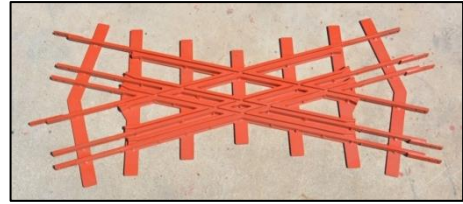


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Section 5: Track - Page 34

This section covers our whole range of 5" gauge, 7 ¼" gauge and dual gauge 5+7 ¼" and 5+3 ½" gauge modular steel track and accessories as well as signals.

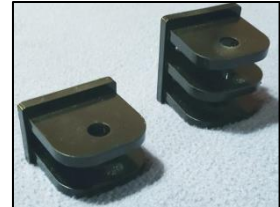
We build Points, curves, straights, and everything you need!



Section 6: Control Systems, Parts and Accessories - Page 42

Includes our PS7 Power Control System, batteries, motors, bogies (standard and motorised), and other useful items like couplers and coupling bars.

Also includes information on transport and storage systems and our MU Power and Control standard



Section 7: About Mini Train Systems and FAQ's - Page 52

Everything you wanted to know and more. And if not, just ask!



**Any and all questions contact Roger Jones
via email info@minitrains.com.au
or phone 0401 059 178**

Look out for us at Inter-Club meets as well!

We'll see you out on the track!



5" Gauge Planet (left) next to a 5" Brush for size comparison

Section 1: Starter Locos

IN THIS SECTION

The Planet and the Brush
5" Gauge Starter Chassis
Can I have Track with that?

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THE PLANET AND THE BRUSH

These handy little 5" gauge 4 wheeled locos are made by our friends Maxitrak in the UK and are ideal as a first loco, for backyard tracks, and going for a run at clubs.

MTS has done some upgrades to improve performance for Australian conditions. We include many items as standard that are normally optional, such as the headlight on the Planet and the "Tug" sound system on both models.

Because we fit our PS7 control systems to these locos, you can "MU" two or more locos and run with the one driver, adding the power of all locos together to pull a greater load.



Unpainted Brush Kit. Included, but not shown in this photo from Maxitrak, is our PS7D-Lite Power Controller and PS7 Hand Held Controller

MINI TRAIN SYSTEMS PTY LTD



The Planet is based on a narrow gauge prototype that ran in many versions on industrial railways around the world, including in Australia, and scales in nicely with the EM Baldwin Cane Loco in Section 2.

Subject to stock availability, the Planet comes in blue, as shown on the previous page, or in green, maroon or Cane Train Yellow.

The Brush is a standard gauge British built industrial shunter than also ran on BR. It fits in nicely with locos like the Class 20 in Section 2.

240 watts and a 12 volt system mean that there is enough power to pull two or three adults or a bunch of kids around the yard or on most club tracks.

Both of these locos are available “Ready to Run” or as a kit.

5" GAUGE STARTER CHASSIS

This chassis is based on the one fitted to the Planet and gives you a ‘jump start’ in building your own loco. It includes all the mechanical and electrical bits and pieces you need to get going. Now you can design and build your own body with confidence that it will run properly.

The kit comes with a pre-assembled chassis plate to which you bolt on motors and wire up to the PS7D-LITE power controller supplied. A plug-in hand controller is also included just the same as the Planet.



This photo from Maxitrak shows the latest version of the Starter Chassis with their standard power controller which is replaced by the PS7D-Lite in the MTS version.



Driver's Riding Car Options

These locos require a driver's riding car carrying a battery to power them. You can build your own riding car or use one of ours, which when bought as a package with one of these locos includes a bonus 10Amp Intelligent Battery Charger.

Our 12 volt cars are 1.2m long and designed so they can handle the tight curves found in some backyard railways. Two seat heights are available, the lower being best for children, and the higher being more comfortable for adults.

If you'd like to build your own riding car we have cable sets available to make life easy.

MINI TRAIN SYSTEMS PTY LTD

SPECIFICATIONS

	Planet	Brush	Chassis		All
Length (mm)	560	595	560	Min Curve Radius	2.5m
Width	255	236	255	Max Speed	9 km/h
Height	465	345	120	Power	240 Watts
Approx. Wt	30kg	30kg	N/A	Operating Voltage	12V

PRICES

	Ready to Run	Painted Kit	Unpainted Kit
Planet Loco Only	\$3,900	\$3,600	\$3,300
Package	\$6,200	\$5,900	\$5,600
Brush Loco Only	\$5,250	\$4,500	\$2,750
Package	\$7,550	\$6,800	\$5,050
Starter Chassis Only	N/A	N/A	\$1,995
Package	N/A	N/A	\$4,295

- “Loco Only” prices include a hand controller but do NOT include a battery, charger or riding car.
- “Package” prices include a loco, hand controller, fully assembled and painted 1.2m Driver’s Riding Car (your choice of high or low seat), Remco RM12-100DC AGM battery and a 10amp intelligent charger.

If using your own Riding Car and Battery

Cable Set (Pre-wired Power Cut-Off switch, Circuit Breaker, cables and connectors) \$ 225

Options:

Double Heading Cables for running with a similar loco \$ 150

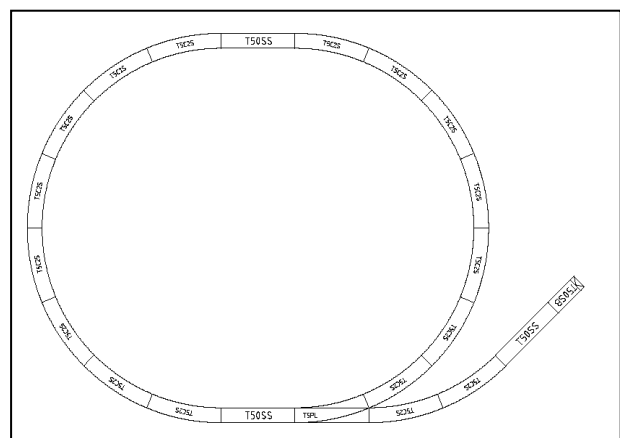
Hand Control to Control Box Upgrade option – add \$ 250

CAN I HAVE TRACK WITH THAT?

These locos are great for running in the back yard and we can tailor a track package to suit almost any space.

The simple layout shown here has 3.8m radius curves, about 27m of mainline plus a siding, fits in about 9m x 12.5m (9 x 10.5 if the siding goes inside the oval).

The price for this package is just \$4,800, so if you add a ready-to-run Planet package deal you can start your own railway empire at home for just \$11,000.



(Prices do not include delivery or installation)

Section 2: Passenger Haulers



Baldwin in Standard Cane Train Yellow livery, ready to customise to suit your favourite Sugar Mill Railway

This section covers 5" and 7 ¼" gauge locos designed to pull at least two passenger cars for running on more demanding home railways and at clubs. Power ratings are from 480W to 1kW.

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and British Locos	Page 11
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NEW 5" EM BALDWIN AUSTRALIAN CANE LOCO

These engines were constructed by EM Baldwin and sons of Castle Hill, New South Wales, Australia.

The company supplied smaller locomotives for industry from the 1950's to the 1980's. Designs included shunting, mining and tunnel locomotives but the most common surviving engines were built for the Queensland sugar industry. At this time the extensive 2ft gauge lines were changing from steam to diesel traction. EM Baldwin built a large number of the replacement diesels to a continuously evolving design, to the extent that there are hardly two alike. Engines and gearboxes varied depending on power requirements and supplier's delivery dates.

The usual sugar industry livery was bright yellow with red and white striped buffer beams. Many enjoyed further enhancement with coloured stripes and panels giving the modeller many opportunities to customise the standard colour scheme.



The Baldwin is also available as a general Industrial Loco in Maroon livery.

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Many of these engines are still hard at work in the cane cutting season, and form the backbone of the largest surviving 2ft gauge industrial railway system in the world.

This model is manufactured by our friends Maxitrak with design input from Mini Train Systems. MTS models feature a sound system as standard, MTS PS7D power control system with regenerative braking and full multi-unit (MU) control for double heading with other MTS locos.

This model offers a wealth of detail surrounding a solid steel body and chassis. The 24V control system, 2 batteries and 8 motors make it a powerful yet easy to handle model.

SPECIFICATIONS

Dimensions: LxWxH 971 x 327 x 474
Weight: Approx 60kg incl. ballast weight
Power: 8 x 60 watt motors = total 480 W
Speed: Approx 9.5 km/h
Load: Two typical 5" gauge straddle passenger cars on level track

Features:

- Gear drive
- MTS PS7D-PLUS Power Controller with hand held controller
- LED lighting set
- "Tug" Sound system is standard in MTS models
- Fully detailed all steel body

Driver's Riding Car

These locos require a driver's riding car with battery to operate. You can build your own riding car or use one of ours, which when bought as a package with one of these locos includes a bonus 10Amp Intelligent Battery Charger.

PRICES

Ready To Run Loco Only	\$ 5,800
Package with Riding Car, Charger and 2 x RM12-75DC Batteries	\$ 8,750

If using your own Riding Car and Battery

Cable Set (4 wire ore-wired Power Cut-Off switch, Circuit Breaker, cables, etc)	\$ 275
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Options:

Double Heading Cables for running with a similar loco	\$ 150
Hand Control to Control Box Upgrade option – add	\$ 250





4845 with all of the correct detail variations for the second and third batches of the NSW Mk1 48 Class. Original Indian Red livery that several examples are preserved in.

Photo taken at the Wagga Wagga track by Les Mouat.

MINI TRAIN SYSTEMS 5" NSW 48 CLASS LOCO

This popular model is now in regular batch production and available to order at any time.

One of the most popular prototypes in Australia, the MTS model features all of the details you expect and performance to match, hauling three to four passenger cars on most tracks. Detail variants for Mk2, Mk3 and Mk4 are available as well as the two distinct sub-types in the Mk1 series.

The recommended 1.2m Driver's Car with two AGM batteries provides enough capacity to run all day in most club environments with options available for increased storage capacity for extreme conditions.

MTS can also build the SAR/ANR 830 Class variant, in standard gauge/broad gauge form. Narrow gauge fans contact us!

As well as the traditional original Indian Red livery as shown above, the 48 class looks good in all its various colours, including: Reverse, Candy, Freight Corp, Pacific National, 125 Years Green, Bicentennial and a whole raft of special successor owner liveries.

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48 CLASS SPECIFICATIONS

Gauge	5" (127mm)
Scale	1 1/8"=1ft (1:10.67)
Length	1386
Width	258
Height	400 (max) 341 (body)
Est Weight	110kg
Min Curve	6.25m
Max Speed	9.5 km/h
Power	900W
Voltage	24V



Double heading 48's using the MTS Multiple Unit system is easy and combines the power to haul greater loads.

Control Panel	YES	MU Operation	YES	Regen Braking	YES
Horn, LED Headlights & Markers			YES		

MTS 48 Class locos can haul up to 4 straddle type passenger cars on most club tracks.

Driver's Riding Car

These locos require a driver's riding car with battery to operate. You can build your own riding car or use one of ours, which when bought as a package with one of these locos includes a bonus 10Amp Intelligent Battery Charger and Vacuum Brake Pump and control.

PRICES

Ready To Run Loco Only **\$15,500**

Package with Riding Car, Charger and 2 x RM12-75DC Batteries **\$18,450**

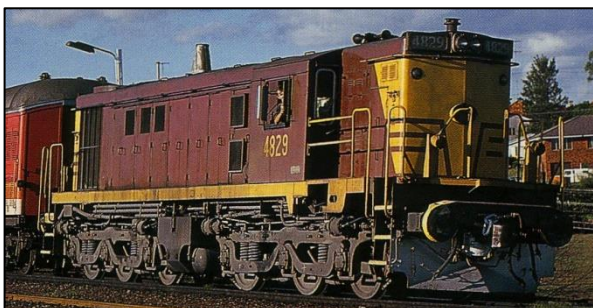
(Indian Red Livery. Some more complex liveries may incur a small extra charge)

If using your own Riding Car and Battery

Cable Set (6 wire - pre-wired Power Cut-Off switch, Circuit Breaker, cables, etc) **\$ 300**

Options:

Double Heading Cables for running with a similar loco **\$ 170**



Just two of many liveries carried by 48's – Google "NSW 48 Class" and select "Images"

MAXITRAK 5" AMERICAN AND BRITISH LOCOS



American F7 in the ever popular Santa Fe "War Bonnet" livery.



BR Class 20 in green. Many are still operational and others are preserved.



BR Class 25 in the attractive two-tone green livery

Our friends at Maxitrak in the UK make a large range of mid-power 5" gauge scale models of British and American diesel locos.

Most are able to handle minimum 3.8m radius curves and with 480w of 24V power, these are perfect for larger home railways or mid-sized club operation.

On a typical lightly graded track they will handle two or possibly three loaded 1.8m passenger cars.

The Class 66 requires a larger minimum track radius of 5m due to its 6 wheeled bogies, but with 720W in motors it is 50% more powerful than the other locos in this group.

These locos are available in painted or unpainted kit form or ready to run. All come with MTS PS7D Power Controllers and are fully MU capable.

Driver's car packages with batteries and charger are also available or you can add our cable set to your own driver's car. If you are pulling more than two passenger cars in a club environment then we also have a suitable vacuum brake system available.

Please note that there is typically a 16 week lead time on painted locos and kits and that some more complex liveries may incur a variation in price.

EMD F7A and F7B

The F7 diesels are hugely popular in the USA. Practical and reliable, nearly 2,400 "A" units and 1500 cab-less "B" units were built between 1949 and 1953, and some are still running today.

The F7 has enough space inside for a pair of

Remco RM12-75DC batteries and comes wired for that arrangement. All other locos come with a 30kg ballast weight.

MINI TRAIN SYSTEMS PTY LTD



BR Class 42 "Warship" in Maroon. Also available in Green and in Blue

If you are running the optional "B" unit you double the power at less than double the price as the "B" unit operates as a booster off the "A" unit's Power Controller, not needing one of its own.

BRITISH DIESEL LOCOS

A range of British outline locos are available covering a wide historical and geographical range from the very early Class 20, through the Class 42 "Warship" and Class 73 Electro-Diesel to the modern Class 66 and related Class 59.

All models run on 24V and are geared for a maximum speed of around 9.5km/h. They include MTS PS7C control systems and are all MU compatible with other MTS locos.

A hand controller is included with each loco. A control panel is an optional extra.

MAXITRAK 5" GAUGE DIESEL SPECIFICATIONS

	Class 66/59	All Others
Power	720 Watts	480 Watts
Min Curve	5.0m	3.8m
Max Speed	9.5km/h	9.5km/h
Super Detail	Standard	Optional
(Super Detail N/A for Warship & F7A)		

Dimensions	LxWxH
Class 20	1240 x 240 x 340
Class 25	1350 x 245 x 345
Class 42 (Warship)	1593 x 235 x 342
Class 66/59	1676 x 220 x 332
Class 73	1380 x 220 x 332
F7A	1346 x 241 x 381



BR Class 66. This loco has 6 wheeled bogies and 50% more power than the other Maxitrak locos in this group.



BR Class 73. Another long lived prototype with many still in service is a wide range of liveries.

Driver's Riding Car

These locos require a driver's riding car with battery to operate. You can build your own riding car or use one of ours, which when bought as a package with one of these locos includes 2 x Remco RM12-75DC AGM batteries and a bonus 10Amp Intelligent Battery Charger. The riding car comes fully assembled and painted even with kit locos!

MINI TRAIN SYSTEMS PTY LTD

PRICES

Ready to Run	Class 20	25 & 73	Warship	66/59	F7A
Loco Only	\$ 8,900	\$ 9,300	\$12,000	\$15,080	\$13,135
Package	\$11,850	\$12,250	\$14,950	\$18,030	\$16,085

Painted Kit	Class 20	25 & 73	Warship	66/59	F7A
Loco Only	\$ 6,900	\$ 7,175	\$ 9,400	\$11,450	\$10,625
Package	\$ 9,850	\$10,125	\$12,350	\$14,400	\$13,575

Painted Kit	Class 20	25 & 73	Warship	66/59	F7A
Loco Only	\$ 4,675	\$ 4,975	\$ 6,800	\$ 7,800	\$ 6,775
Package	\$ 7,625	\$ 7,925	\$ 9,750	\$10,750	\$ 9,725

If using your own Riding Car and Battery

Cable Set (4 wire - pre-wired Power Cut-Off switch, Circuit Breaker, cables, etc) \$ 275

Loco Options

Superdetail Kit for Class 20 or 25 \$ 750
 Superdetail Kit for Class 73 \$ 850
 Pullman Livery for Class 73 \$ 1,000

F7B Unit (requires A-Unit to operate) Relevant F7A Price less \$ 500

Double Heading Cables for running with a similar loco \$ 150

Hand Control to Control Box Upgrade option – add \$ 250



BR Class 20, overhauled and superdetailed by Danny Osborne shown here driving.

MINI TRAIN SYSTEMS PTY LTD



MAXITRAK PLANET 2

5" OR 7 ¼" GAUGE

The new "Super-Size" Planet from Maxitrak and MTS, while designed as a 7 ¼" gauge loco is also available with 5" gauge wheels instead.

Bigger and heavier than the basic 5" gauge Planet, with 700 watts and a 24V system it's got a lot more power than its smaller namesake and will

handle tougher track conditions and a higher load. For keen enthusiasts it is also available in kit form as well as the normal ready-to-run version.

The 5" gauge version can handle up to three straddle type passenger cars on many club layouts.

SPECIFICATIONS

Dimensions	LxWxH	840 x 385 x 700
Min Curve	3.8m on 5" Gauge, 6.25m on 7 ¼"	
Power	700W	

Approx. Weight	70kg
Max Speed	9 km/h
Voltage	24V

Driver's Riding Car

These locos require a driver's riding car with battery to operate. You can build your own riding car or use one of ours, which when bought as a package with one of these locos includes 2 x Remco RM12-75DC AGM batteries and a bonus 10Amp Intelligent Battery Charger. The riding car comes fully assembled and painted even with kit locos!

<u>PRICES</u>	Ready to Run	Unpainted Kit
Loco Only	\$ 7,500	\$ 5,700
Package	\$10,450	\$ 8,650

If using your own Riding Car and Battery

Cable Set (4 wire - pre-wired Power Cut-Off switch, Circuit Breaker, cables and connectors) \$ 275

Options:

Double Heading Cables for running with a similar loco
Hand Control to Control Box Upgrade option – add

\$ 150
\$ 250



MINI TRAIN SYSTEMS

G.E.R. TRAM - 5" OR 7 1/4"

Our very own MTS Great Eastern Railway tram loco returns with a new 900 watt 24V drive system.

Like the Planet 2 it's a 7 1/4" gauge loco which can be fitted with 5" gauge wheelsets, but also has a long wheelbase for its size, extra power and a flexible suspension for more demanding tracks.



It is great for steeper garden layouts and has enough power to pull up to four 5" gauge 1.8m or two enclosed sided 7 1/4" gauge passenger cars on most club layouts. In the 7 1/4" format you can even add one of our Booster Cars (see page 21) to our 48V version to double the haulage capacity!

This loco is similar in style to some home-built 5" tram locos seen from time to time, but is much larger and much more powerful.

SPECIFICATIONS

Dimensions	LxWxH	870 x 390 x 600	Approx. Weight	110kg
Min Curve	3.8m on 5" Gauge, 6.25m on 7 1/4"		Max Speed	9 km/h
Power	900W		Voltage	24V

Includes Driver's Riding Car mounted Control Box as standard.

Driver's Riding Car

These locos require a driver's riding car with battery to operate. You can build your own riding car or use one of ours, which when bought as a package with one of these locos includes 2 x Remco RM12-74DC AGM batteries and a bonus 10Amp Intelligent Battery Charger.

PRICES

Ready to Run!

Loco Only	\$8,500	Package with Riding Car, Batteries and Charger	\$11,450
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If using your own Riding Car and Battery

Cable Set (6 wire - pre-wired Power Cut-Off switch, Circuit Breaker, cables and connectors)	\$ 300
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Options:

Double Heading Cables for running with a similar loco	\$ 170
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This loco can also be configured for 48V operation.

MINI TRAIN SYSTEMS "VULCAN" - 7 ¼" GAUGE STEAM

OUTLINE ELECTRIC

"Vulcan" is based on a Bagnall industrial shunter. The prototypes are the low slung 0-4-0 saddle tanks "Judy" and "Alfred" built in 1937 for work at Par Harbour in Cornwall.

These are very cute locos, and also very stable for a 4 wheeler thanks to the heavy ballast weight MTS places inside the chassis between the axles of the driving wheels. The 4 wheel chassis also enables it to go around very tight curves.



This new 900W 24V version is our most affordable "steam outline" loco ever, and incorporates the charm of steam with the practicality, power and reliability of an electric loco

SPECIFICATIONS

Dimensions	LxWxH	980 x 389 x 450	Approx.Weight	100kg
Min Curve	6.25m		Max Speed	9 km/h
Power	900W		Voltage	24V

Includes Driver's Riding Car mounted Control Box as standard.

Driver's Riding Car

These locos require a driver's riding car with battery to operate. You can build your own riding car or use one of ours, which when bought as a package with one of these locos includes 2 x Remco RM12-74DC AGM batteries and a bonus 10Amp Intelligent Battery Charger.

PRICES **Ready to Run!**

Loco Only	\$12,500	Package with Riding Car, Batteries and Charger	\$15,450
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If using your own Riding Car and Battery

Cable Set (6 wire - pre-wired Power Cut-Off switch, Circuit Breaker, cables, etc)	\$ 300
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Options:

Double Heading Cables for running with a similar loco	\$ 170
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This loco can also be configured for 48V operation.



Section 3: Heavy Haulers

These are more powerful locos intended to pull 4 or more 5" straddle cars and similar weights of 7 ¼" cars. Many of these locos have become the backbone of public running at clubs around Australia. Power ratings for these locos are all around 2kW, and for 7 ¼" gauge locos a Booster Car is also available to provide even more power!

All of these locos are designed and built in Australia by Mini Train Systems.

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5" or 7 ¼" or Gauge Convertible Drewry Shunter	Page 18
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5" Gauge QR 2170 and 2400 Class	Page 22
5" Gauge NSW 81 Class	Page 23

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5" Gauge Drewry with cranks and rods in special red and white livery.

5" OR 7 1/4" DREWRY SHUNTER

Based on 1950's "Drewry Shunters" that still operate around the world on Standard Gauge, including the BR Class 04 (our 7 1/4" version) and the 3ft 6" Gauge Tasmanian V Class (our 5" version). Variations also ran in New Zealand and Western Australia.

As well as the standard versions with connecting rods between the wheels we also have chain drive versions, both single gauge and a gauge convertible version for people who like to travel far afield.

These locos will haul up to 4 of our enclosed 7 1/4 cars or 6 straddle cars on typical tracks.

SPECIFICATIONS

- Steel body with plenty of detail
- MTS PS7D-Plus power controller
- Driver's car mounted Control Panel
- Loud electric horns
- Powerful LED headlight
- Length 1060mm, Width 350mm, Height 495mm, Weight 120kg
- Max speed about 9 km/h
- Fully MU capable for single driver double heading
- Fully painted and ready to run



MTS built 7 1/4" Drewry painted in BR Blue by Maxitrak (UK)

PRICING

Ready to Run	5" Rod	7 1/4" Rod	5" Chain	7 1/4" Chain	Convert
Loco Only Price	\$13,000	\$13,000	\$11,500	\$11,500	\$13,000
Loco+Package Price	\$16,500	\$16,700	\$15,000	\$15,200	\$17,700

Standard Ready to Run Painted Package Deals include:

- 1.5m Driver's Riding Car
- 4 x Remco 12-75DC AGM Deep Cycle Batteries
- 20A Intelligent Battery Charger

Options and Accessories

48V 8 wire Cable set if using your own driver's car	\$ 350
Double Heading MU Jumper Set (6 wire power)	\$ 170
"Dead Man" Option (may vary with non-MTS Driver's Car)	\$ 295
Vacuum Brake Pump and fittings for driver's car	\$ 350
Air Brake Control System (charged from lineside compressor not incl.)	\$1,250
Air Brake Control System with compressor and upgrade to 1.8m car	\$1,850

7 ¼" GAUGE "AUSTERITY" AND "SOUTHERN" STEAM OUTLINE ELECTRIC LOCOS



Austerity Tank in Blue with red lining. There are a huge range of liveries available for this loco even before you start inventing your own!

AUSTERITY 0-6-0

During World War 2 Hunslet in the UK and their subcontractors built hundreds of these locos as shunters for use in the UK and in Europe. They continued in use and with new construction post-war with the LNER, and subsequently BR, as the J94 class and in military and private railways. So many operators that it's hard to keep track, but most notably the National Coal Board (NCB) which, as probably

the last "in-service" operator, was the source of many of the currently preserved examples. Of the 450 plus built, according to Wikipedia, some 56 have been preserved.

For those familiar with it, Public Works Dept. (PWD) No.79, preserved at the NSW Rail Museum, Thirlmere NSW, is an example of the earlier (and smaller) "16 inch Hunslet" built in the 1930's and shares many design features with these locos.

In revenue operation and in preservation they have appeared in a huge number of liveries – just do a Google Images search and be amazed! They are a particularly handy loco with plenty of power for the size and are now our "flagship" 7 ¼" Electric Steam Outline Loco.

SOUTHERN 0-6-0

Developed from our very first 7 ¼" design, this model is inspired by the 1913 built LB&SCR/Southern Railway E2 Class.

It's compact, powerful and looks great either in the Southern Green as shown, in Black or in LBSCR Brown livery with or without the extended side tanks.



"Southern" in the stylish green livery that inspired its name

MINI TRAIN SYSTEMS PTY LTD

SPECIFICATIONS

Dimensions:	LxWxH	Austerity - 1154x 318 x 416	Southern - 1154x350x550
Minimum Curve Radius	8.5m	Approx Weight	150kg
Max Speed	9.5 km/h	Power	2000W
Voltage	48V		
Driver's Riding Car mounted Control Panel Included			

PRICES **Ready to Run!**

	Austerity	Southern
Loco Only Price	\$16,000	\$17,500
Loco+Package Price	\$19,000	\$20,500

Standard Ready to Run Painted Package Deals include:

- 1.5m Driver's Riding Car
- 4 x Remco 12-75DC AGM Deep Cycle Batteries
- 20A Intelligent Battery Charger

Options and Accessories

48V Cable set if using your own driver's car	\$ 350
Double Heading MU Jumper Set (6 wire power)	\$ 170
"Dead Man" Option (may vary with non-MTS Driver's Car)	\$ 295
Vacuum Brake Pump and fittings for driver's car	\$ 350
Air Brake Control System (charged from lineside compressor not incl.)	\$1,250
Air Brake Control System with compressor and upgrade to 1.8m car	\$1,850



A "Southern" and train running on a private miniature railway on an Island in the Indian Ocean!

7 ¼" GAUGE BOOSTERS

This car is designed to work with any of our heavy duty 7 ¼" gauge locos – Drewry, Austerity, Southern, or even the smaller Vulcan and Tram in Section 2.

Sitting between the loco and the Driver's Riding Car, it provides an extra 1kW of power with its own adhesion weight, at a much lower cost than a second scale model loco.



New Salt Wagon version with lettering to clients specifications.

- Looks like a typical Salt Wagon or 7 plank wagon with a “coal” or “gravel” load concealing the drive.
- Plugs straight into any of our 7 ¼" gauge locos to get another 1kW of power without the cost of the power electronics or the body detail of a complete second loco.
- Adds capacity for two extra loaded MTS enclosed passengers cars in typical operating conditions.
- Length 905mm, Width 355mm, Height: 7 Plank 400mm, Salt Wagon 480mm
- This is an alternative to using booster bogies in the Driver's Riding Car, though you can have both!

PRICES

7 Plank Wagon

Salt Wagon

Ready to Run!

\$4,500

\$4,800



Standard 7 Plank Coal Wagon. We can decorate this in a range of colours and add decals to suit you.

A Booster Car not only adds to the power available, the extra adhesive weight improves performance overall.

On top of that there is a surprising improvement in the aesthetic appearance of the loco by separating it visually from the driver's riding car.





5" QR 2170 AND 2400

These models represent examples of a whole range of QR classes and are available with both the original style cab shown in the model photo, or the later upgraded version as shown in the prototype image.

Built to a scale of 1:8 (1 ½" to the foot), the common scale for 7 ¼" gauge, but due to the narrow gauge prototype running on 5" gauge these are in many ways the perfect "heavy hauler" for clubs. With 1.8kW of power and a highly efficient 48V system, they are capable of hauling 6 or more fully loaded 5" gauge straddle cars on most tracks, or up to about 4 enclosed 7 ¼" gauge cars on dual gauge tracks.

These are big locos - 2.25m on the frames and weigh in at around 270kg so with all wheels driven have plenty of adhesion to handle the heaviest club load, yet are still easily transportable in an 8x5 trailer.



For added realism these locos are also fitted with the Australian Designed "MyLocoSound" Diesel sound simulator, programmed to suit the GM motor in the prototype.

These locos are designed to carry internal batteries which if used on their own give a capacity of 220 Amp Hours, which should be enough to run for the day with 2 cars on most club tracks. For heavier loads and/or longer running, it is wired to be able to add batteries in the driver's riding car, which can more than double the charge capacity of the consist.

Like all MTS PS7 controlled locos, the 2170/2400 Class locos can double head with similarly fitted locos to combine power for even greater loads or just plain fun.

Prices and Specifications are on Page 24.





Prototype photo in Pacific National Livery. The MTS model will be available in all liveries and where appropriate incorporate the detail modifications made with 8181-8184 and subsequently reflected into the original locos.

5" NSW 81 CLASS

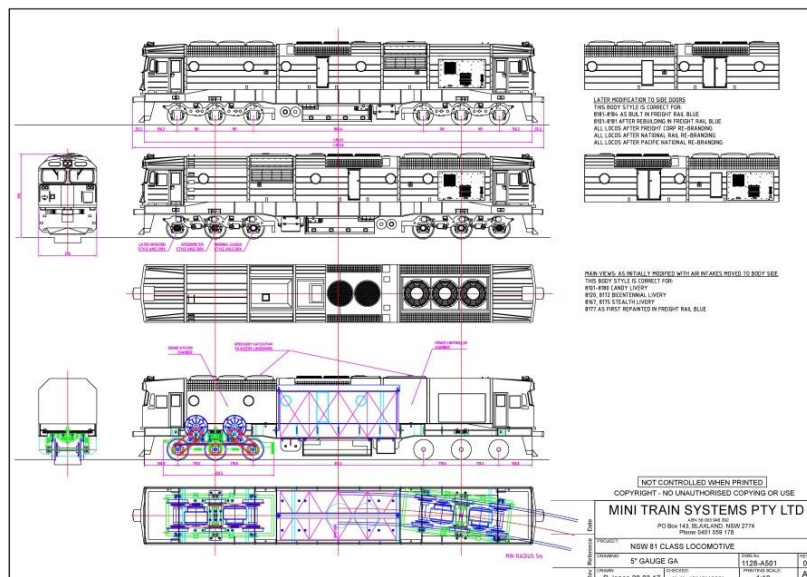
This is the next model in our design schedule and the first of these will be test running later in 2019.

The 81 class was a game changer when it first appeared on the NSW system in the 1980's, offering previously unknown levels of power and reliability. Pioneers of the Candy Red livery, they later saw service in variations of Freight Rail/Freight Corp Blue, Bicentennial livery and even the National Rail colour scheme. All are now painted in Pacific National livery, but we can of course build in any livery, current or historical that you like.

Our 81 Class has the same power and performance as our QR2170/2400 models but as 5" gauge standard gauge models are more compact and lighter for transport.

Even with the smaller size, with the wider car body design, these locos still have capacity for the same internal batteries as used in the QR locos, for similar range and performance.

Prices and Specifications are on the next page.



This snapshot of our General Arrangement drawing gives you some idea of the detail and accuracy incorporated in the design of these models.

SCALE AUSTRALIAN DIESEL SPECIFICATIONS

	81 Class	2170 & 2400 CLASSES
Gauge	5" (127mm)	5" (127mm)
Scale	1 1/8"=1ft (1:10.67)	1.5"=1'(1:8)
Length (mm)	1950	2250
Width	275	346
Height	400 (max)	484 (max)
Min Curve	6.25m	8.5m
Est Weight	180kg	275kg w. internal batteries
Max Speed	9.5 km/h	9.5 km/h
Power	1800W	1800W
Voltage	48V	48V
Control Panel	YES	YES
MU Operation	YES	YES
Regen Braking	YES	YES
Sound Simulator	YES	YES
Horn, LED Headlights & Markers	YES	YES

PRICES **Ready to Run!**

Loco Only	\$19,000	\$20,500
Package	\$22,000	\$23,500

Package Deals include:

- 1.5m Driver's Riding Car
- 4 x Remco 12-55DC AGM Deep Cycle Batteries in the loco
- 20A Intelligent Battery Charger

Options and Accessories

48V Cable set if using your own driver's car	\$ 350
4 x Remco 12-75DC AGM Deep Cycle Batteries in the riding car	\$1,500
Double Heading MU Jumper Set (8 wire power)	\$ 190
"Dead Man" Option (may vary with non-MTS Driver's Car)	\$ 295
Vacuum Brake Pump and fittings for driver's car	\$ 350
Air Brake Control System (charged from lineside compressor not incl.)	\$1,250
Air Brake Control System with compressor and upgrade to 1.8m car	\$1,850

Note that MTS 48V Driver's Cars now also provide power on the 24V line. This means that you can double head suitably wired 48V and 24V locos with appropriate jumper leads and subject to battery load limits.

If the 48V locos have internal batteries then the mix can be in any order – eg. 81Class – 48 Class – 81 Class. If there are no internal batteries, no problem: Just make sure you're using a suitably wired 48V Driver's Car and have the 24V locos at the front.



7 ¼" Gauge Motorised Riding Car and standard High Seat Passenger Car on Test at WDLS Fairfield. Note mid-car back rest, high seat format and optional Control Panel. These cars had not yet been fully painted.

Section 4: Passenger Cars, Gardening Wagons and Scale Wagons

IN THIS SECTION

Straddle Type Carriages

(Includes Driver's, Passenger, Guards and Motorised types)

Enclosed Passenger Cars for 7 ¼" Gauge

Gardening Wagons

New 5" Gauge Scale Freight and Driver's Cars

Next Page

Page 28

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Page 31



This photo shows a specially built Planet train with a loco and Driver's car at each end and a passenger car in the middle – all "Low Seat" versions. Special wiring has been fitted to the train so that it can be driven from either end simply by unplugging and plugging in the hand held PS7 controller.

STRADDLE TYPE CARRIAGES

Driver's Riding Cars

These are the perfect addition to turn your MTS or home-build electric loco into a complete running unit. Comfortable, light weight and sturdy, these cars are available in a range of lengths and colours.

- Pre-wired for 12V, 24V or 48V systems
- Fitted with Circuit Breakers and a Power Cut-Off Switch for safety
- Latching hand operated Parking Brake
- Flashing tail lights
- Optional Vacuum Brake pump and control and/or Air Brakes control system
- Black painted steel frame, timber ends and foot boards
- Colorbond® side panels in a range of colours
- Sandberg Bogies on all 5" gauge cars, Mini Train Systems "H" Bogies on all 7 ¼" cars
- Motorised bogie options available to enable your riding car to act as a power booster for your loco or even operate on its own as an independent unit!
- Batteries not included but available through us.

5" Gauge Cars

1.2m – "Low Seat" 12V Car	\$1,900
1.2m – "High Seat" Car for 12V or 24V	\$2,000
1.5m – "High Seat" Car for 24V or 48V	\$2,150
1.8m – "High Seat" Car for 24V or 48V	\$2,250

Options

Vacuum Brake Pump and Control System	\$ 200
24V 450W Motorised version, add	\$1,200

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7 ¼" Gauge Cars

1.2m – "High Seat" 24V	\$,2100
1.5m – "High Seat" 24V or 48V	\$2,200
1.8m – "High Seat" 24V or 48V	\$2,300

Options

Air Brake Control Systems – requires lineside air for re-charging	\$1,250
On board air pump (1.2m N/A, 1.5m external, 1.8m internal)	\$ 400
48V 1kW Motorised version add	\$1,500
Hand controller for Motorised to operate independent of loco	\$ 150

Passenger Cars

- Two Seat Heights – "Low" (290mm above footboards) - most comfortable for children and "High" (380mm) - most comfortable for adult drivers.
- Standard passenger car style for 5" gauge railways.
- 7 ¼" versions also available – but check out our Enclosed passenger cars as well!
- Design and colours match our Driver's riding cars.
- Guards version available with hand brake



Type	5" Gauge	7 ¼" Gauge
1.2m "Low Seat"	\$1,900	\$2,000
1.5m "Low Seat"	\$2,000	\$2,100
1.8m "Low Seat"	\$2,100	\$2,200
1.2m "High Seat" Guards with hand brake	\$2,000	\$2,100

Options

High Seat either Gauge, any length, add	\$100
Vacuum Brakes (act on one bogie) for 5" Gauge only, add	\$200
Standard straddle passenger cars are un-braked.	



A pair of MTS enclosed cars (hauled by a gauge convertible Drewry) in the standard "freight car" style livery.

7 ¼" GAUGE ENCLOSED SIDED PASSENGER CARS

- Enclosed cars are essential for all commercial applications and are recommended for private and club use. These cars provide a far greater level of passenger safety than straddle cars - and steel lined foot-wells can reduce footwear restrictions on passengers.
- The large sides allow the owner a wide range of decoration options to customise their train and give it real character.
- Normally built as articulated multi car sets.
- Single "Independent" cars now also available
- Articulated sets include:
 - An "A" car at the front - two bogies, a bar coupler at the front and ball coupling at the rear.
 - A "B" car at the rear - one bogie (at the rear) and a ball socket coupling at the front.
 - Sets can be extended by adding intermediate "C" cars or by bar coupling to other sets.
- Standard cars are approximately 2.5m long between coupler centres, with a 2.2m seat length and will seat typically 2 adults plus 3 children.
- A five car set, properly coupled, will fit (just) in one piece into a 40ft shipping container.
- Typical overall width (decoration dependent) 530mm, height under 600mm depending on body style.
- MTS "G" type bogies are standard.
- Standard decoration is "freight car" style with single body colour, plus black frames and bogies. More elaborate mouldings and paint schemes available at extra cost.

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Four car set with a more elaborate decoration: Right to left, a “composite”, a “dining”, a “brake third” and a “full brake” –looking great!

ENCLOSED CAR PRICING

	Indept.	2 Cars	3 Cars	4 Cars	Extra C Car
Ready to Run					
Unbraked	\$4,000	\$7,000	\$10,000	\$13,000	\$3,000
Air Braked	\$5,000	\$9,000	\$13,000	\$17,000	\$4,000



Articulation Couplings

This image shows a more elaborate goods van style decoration. The rear car has been removed showing the ball coupling used at the back of an “A” or “C” Car. The front of a “B” (or a “C”) has a trailer socket coupling which sits over and locks down on this. The two cars then share this bogie, which is rated to take the weight, while the over-ride bars stop the rear car from twisting too much relative to the front car.

Seating and Foot Space

This image shows a car built to the standard freight car style and decorated for a commercial customer.

The longitudinal seat can optionally be made removable if you want your car to double as an actual freight car!

The seat to floor height over the bogies is similar to our low-seat straddle cars. The section between the bogies has a reinforced drop floor making that area more comfortable for adults. We recommend that children always sit in front of their adults for safety and these cars are very comfortable in that mode.



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GARDENING WAGONS

These cars were developed in response to customer requests and have proved quite popular. They are not intended as “scale” wagons in any way but as good solid and durable wagons for use in the garden.

5” Gauge wagons are supplied with un-braked “Sandberg” bogies as shown.

7 ¼” Gauge wagons are identical body-wise and are supplied with un-braked MTS “H-Bogies”.

Design variations including different lengths and body details are available to special order.

	5” Gauge	7 ¼” Gauge
1.8m Open Wagon	\$1,900	\$2,000
1.8m Flat Car	\$1,800	\$1,900



MINI TRAIN SYSTEMS PTY LTD

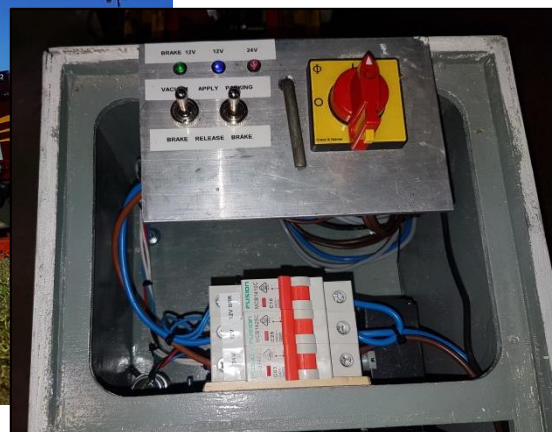


NEW 5" GAUGE SCALE FREIGHT AND DRIVER'S CARS!

These new cars are the first of a range of scale model freight cars, some of which can double as driver's riding and battery cars.

Chassis are welded steel and bodies may be steel and/or laser cut plywood and timber construction. Sandberg bogies are supplied for economy, strength and reliability however if you wish to substitute

alternate bogies with a more scale appearance, all cars are available without bogies.



MRC/MBC/BPV

These cars are based on the NSW insulated/refrigerated milk van, famous in its "Nepean Milk" form as preserved at the Valley Heights Railway Museum. Many were later converted to insulated box vans (MBC) and with the addition of an extra compartment at one end for detonators, as BPV Explosive vans.

The MTS model is available as a straight scale wagon or as a driver's riding car with electrically operated parking brake, vacuum pump for train brakes, and standard MTS wiring for two batteries for 24V locomotives.

Scale wagons come with a shaped timber roof with appropriate detail features for the type selected. Driver's cars come with a padded seat, mounting space for control box (or brake control switches if a hand controller is used instead), plus a pair of screw-in footpegs. Exchange scale roof and second pair of footpegs for a co-driver are optional.

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		With Bogies	No Bogies
MBC Box Van (plain roof)	Unpainted	\$3,020.00	\$2,220.00
	Painted & Decaled	\$3,680.00	\$2,880.00
BPV Explosives (extra doors)	Unpainted	\$3,120.00	\$2,320.00
	Painted & Decaled	\$3,780.00	\$2,980.00
MRC Refrigerator (catwalk, ladders)	Unpainted	\$3,550.00	\$2,750.00
	Painted & Decaled	\$4,210.00	\$3,410.00
	Nepean Milk add	\$ 90	\$ 90

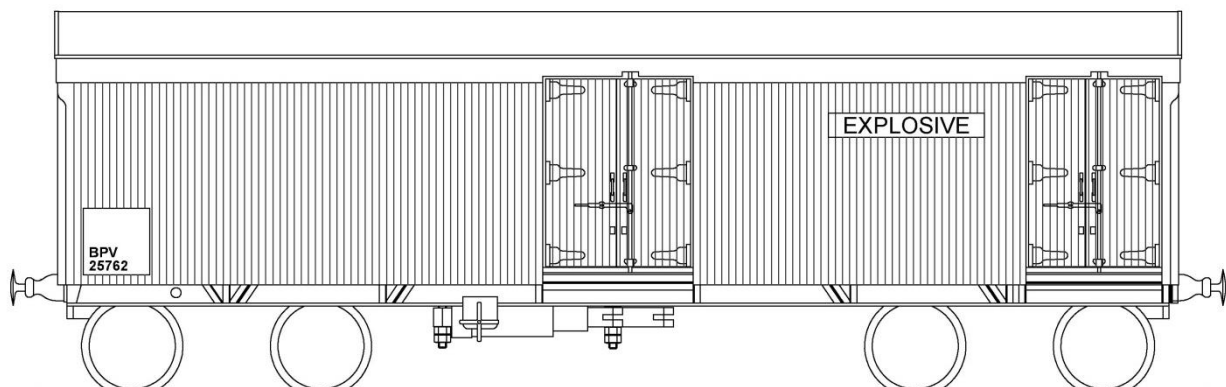
Passenger Car variant with

- Cushioned seat and foot-pegs as well as scale roof add \$260
- Extra pair of Foot-pegs for 2 seater \$ 60

Driver's Car variant with

Add \$1770

- Cushioned seat as well as scale roof
- Foot-pegs
- Electrically operated parking brake
- Main switch, circuit breakers and wiring for 2 batteries and 24V loco
- Vacuum Brake Pump



The BPV explosives van version is shown above, which includes the extra compartment and doors added on one end so that detonators could be stored separate from the explosives. These lasted through the blue livery PTC period and into the maroon L7 SRA era.

The MBC box van version is similar, just lacking the end doors. These also lasted right through.

All versions include sprung buffers, brass angle frame details and 3D printed plastic hinges and door handles.



MLE/UME Flat Car

Over 500 MLE and UME 45' flat wagons were built in the 1940s and 1950s to carry increasing large-format heavy loads, as part of modernisations of the freight rollingstock in NSW.

Originally coded LE, these wagons have seen a long life with many conversions taking place to keep up with modern loads. Sheet steel, Containers, Pipe, and more are often seen on these wagons.

Pictured here is the UME Variant with a typical load.

AVAILABLE VERSIONS

- MLE - Bolster Flat-Wagon
- UME - Un-bolstered variant - as pictured
- CME, CMX, GME, JME, PMX, TMX, etc.
- Other sub-variants as requested

CONSTRUCTION

Our wagons feature a fully welded steel underframe which provides good strength for heavy loading, while the timber deck keeps the overall weight down. There are also plenty of detail features across the body.

PRICES

Basic	\$1995	With mixed load	\$2495	Without load or bogies	\$1495
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Section 5: Track

IN THIS SECTION

Executive Summary - The range and standards in broad terms	This Page
Straights and Curves	Page 36
Points and Diamonds	Page 37
Special Track Sections	Page 39
Signals	Page 40
Build Your Own Track	Page 41



EXECUTIVE SUMMARY

- Our track is all welded steel with 25mm high flat bar rails and 50mm wide flat bar sleepers. It is MIG welded in jigs and supplied painted in red oxide primer with bolts, washers and nuts to join modules together.
- Average price per metre for bulk **STRAIGHT** track works out to be:
 - 5" Gauge – around \$89
 - 7 ¼" Gauge – around \$99
 - Dual Gauge – around \$120
 - Around 10% cheaper if purchased unpainted.
- Average price per metre for bulk **CURVED** track works out to be:
 - 5" Gauge – around \$99
 - 7 ¼" Gauge – around \$110
 - Dual Gauge – around \$131
 - Around 10% cheaper if purchased unpainted.
- Straight track comes in multiples and fractions of 1.5m, and the cheapest way to buy it is in 3m lengths.

MINI TRAIN SYSTEMS PTY LTD

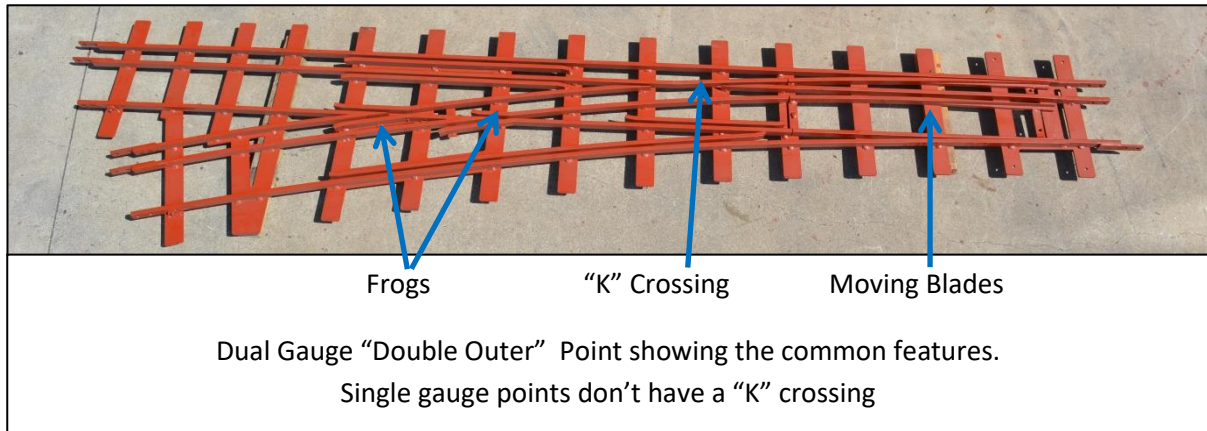
- 5" gauge curved track comes in 2.5m, 3.8m, 5.0m and 6.25m radius primarily for backyard track. 22.5 degree modules are used and 3.8m and 6.25m radius points work with them to form simple "trainset" style geometry. Check the minimum radius required for your locos before ordering these small radius curves.
- Where you've got the space, larger 5" gauge curves are available in 8.5m, 10m, 12m and 14m radius together with 10m and 14m radius points. We can supply the odd length filler pieces that may be required for larger sites or complex layouts.
- 7 ¼" gauge curves and points start at 6.25m radius with 10m minimum recommended. Once again check what your loco needs.
- The gauge is spread typically by 3mm on curves and abutting straights should be ordered with the adjustment built in.
- Our points come in various radii and types and we have a number of locking options:
 - Generally speaking if the points are "trailing" (ie. trains only pass through from the two track "frog" end to the single track "blade" end) then the blades can be left to float freely and move into position under the weight of the train as it passes through.
 - If trains run the other way (blade to frog) they are called "facing" and must have a positive locking mechanism so that the blades can't move and split the train as it passes over. We offer electric point motors and now three different styles of hand operated point throws.
 - 5" + 3 ½" dual gauge points always have to have a locking mechanism due to the need to put blades in the "K" crossing.
- Prices shown are for single pieces purchased one at a time. A 5% discount applies for 12 or more pieces of painted track or 15% unpainted. Points are only sold painted to protect the machined surfaces and moving parts.
- We have toolsets to assist you in building your own track should you wish and share our building standard so that track you build can be compatible with track you purchase from us.
- For those with access to AutoCAD®, ProgeCAD® or similar packages we have a free "puppet" file available making track design simpler.

BASIC DIMENSIONS	5" gauge	5"+3 ½"	7 ¼" gauge	7 ¼" + 5"
Sleeper Length	295mm	295mm	395mm	395mm
Rail	25x10	25x10	25x12	25x12
Curve Gauge Spread	3mm	3mm/2mm	3mm	3mm/3mm

STRAIGHTS AND CURVES

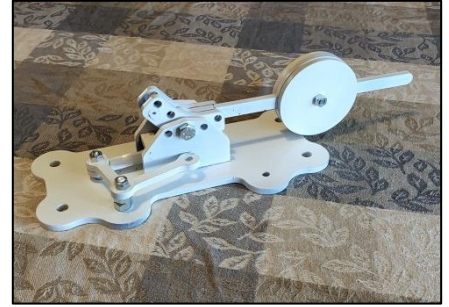
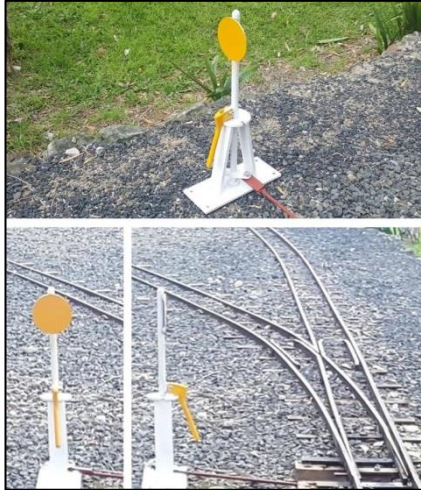
Straight	Length	5" Gauge	5" + 3 ½"	7 ¼" Gauge	7 ¼" + 5"
"Single"	1.5m	\$157	\$215	\$173	\$225
"Double"	3.0m	\$267	\$367	\$299	\$383
"Half"	750mm	\$110	\$147	\$120	\$152
Buffer Stop	750mm	\$157	\$173	\$168	\$183
<ul style="list-style-type: none"> Custom made shorter straights are available – same price as next largest standard straight. eg. 1395mm is the same price as 1500mm. Please specify if either or both ends of a straight is connecting to a curve so that we can gauge spread to suit. 					
Curve Radius	Angle/Length	5" Gauge	5" + 3 ½"	7 ¼" Gauge	7 ¼" + 5"
Small Radius					
2.5m	45deg/1.96m	\$246			
3.8m	22.5deg/1.5m	\$199			
5.0m	22.5deg/1.96m	\$231			
6.25m	15deg/1.64m	\$204		\$220	
6.25m	22.5deg/2.45m	\$267		\$294	
Large Radius					
8.5m	15deg/2.1m	\$252	\$351	\$278	\$362
10m	15deg/2.6m	\$278	\$393	\$309	\$399
12m	15deg/3.1m	\$315	\$441	\$346	\$456
14m	15deg/3.6m	\$362	\$504	\$399	\$509
18m	7.5 deg/2.35m	\$257	\$362	\$288	\$378
<ul style="list-style-type: none"> Gauge Spread 2.5m to 14m radius = 3mm, reduced to 1.5mm above 14m radius. Custom made smaller angle curves are available similar prices to standard units. For dual gauge, please specify "double outer rail" or "double inner rail" as required. Curves with checkrails on the inner rail - add \$30 per metre. Straight track with guard rails for bridges – add \$50 per metre If laying curved track on hard flat surfaces such as concrete, consider "step track": Packer welded between outer rail and sleeper to maintain superelevation – add \$15 per metre. 					

POINTS AND DIAMONDS



Points Radius/Angle	Straight Length	5" Gauge	5" + 3 1/2"	7 1/4" Gauge	7 1/4" + 5"
Small Radius					
3.8m/22.5deg Left or Right	1.5m	\$ 795			
6.25m/15deg Left or Right	2.25m	\$ 850			
6.25m/22.5deg Left or Right	2.25m			\$ 950	
Large Radius					
10m/15deg Left, Right or Wye	3.0m	\$ 939	\$1,569	\$1,044	\$1,569
14m/12deg++ Left or Right	3.0m	\$1,044	\$1,674	\$1,149	\$1,674
14m/3deg extender++		\$141	\$ 199	\$ 157	\$ 204
++ Point is 12 degrees. 3 degree extender is needed to match 15 degree module.					
18m Radius Left or Right +++	4.5m			\$1,359	\$1,989
18m/2.5deg extender+++				\$ 168	\$ 215
+++ Point is 12.5 degrees. 2.5degree extender is needed to match 15 degree module					
Special Points					
3 Way Point - 10m Radius, 15 Degree	3.0m			\$2,304	
Single Slip – 10m Radius, 15 Degree	3.75m			\$3,144	
Double Slip – 10m Radius, 15 Degree	3.75m			\$4,509	
<ul style="list-style-type: none"> 5"+3 1/2" have bladed "K" Crossings and MUST have a lever or point motor fitted. Other versions may have "free trailing" blades in certain circumstances and not require a positive locking over actuator of any kind. For dual gauge, please specify "double outer rail" or "double inner rail" as required. 					

MINI TRAIN SYSTEMS PTY LTD



Far Left: Large UK style "Throw-over"

Near Left: US "Rotator" style (Both supplied all white: Yellow picked out here for photographic purposes.)

Above: New compact "Throw-over"

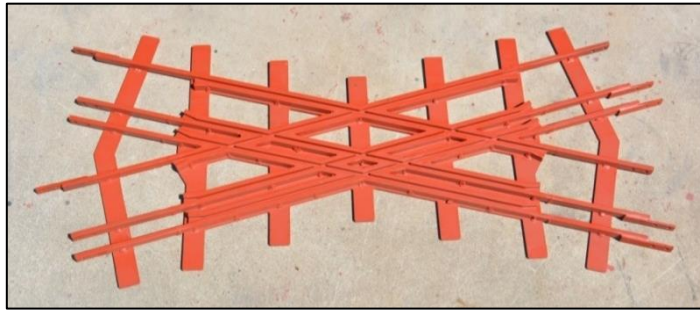
POINT LEVERS	5" Gauge	5" + 3 1/2"	7 1/4" Gauge	7 1/4" + 5"
NEW Compact Throw Over (ideal for 5")	\$250	\$350		
Large Throw Over (recommended for 7 1/4")			\$300	\$400
Rotator – Sprung at point and suitable for all gauges	\$300	\$350	\$300	\$350
POINT MOTORS	\$400	\$500	\$400	\$500
NEW Protective Tray for point mechanism	\$ 80	\$ 80	\$100	\$100
Three Way Points – 2 Throws or Point Motors, Double Slips 2 Throws or Point Motors plus \$250				
Point Radio Control Package	All Gauges			
4 channels - Includes 2 remotes	\$800			
Extra Remote	\$35			
Junction Interlocking	Quoted on each project			



Above: Point motor attached to a 5" + 3 1/2" gauge point (checker plate mechanism cover not shown)

Right: Two point motors, complete with checker plate cover in place, attached to a pair of club built points.





30 Degree 7 1/4" + 5" Dual Gauge Diamond

Diamonds Angle	Straight Length	5" Gauge	5" + 3 1/2"	7 1/4" Gauge	7 1/4" + 5"
22.5 or 45	1.5m or 1.75m	\$1,195	\$1,395	\$1,295	\$1,395
30 or 60	1.5m				
75 or 90	0.75m				
15	3.0m	\$1,295	\$1,595	\$1,495	\$1,595

SPECIAL TRACK SECTIONS

Raised Service Tracks

Raised track sections are intended for service areas and loading bays. They are made from 50mm high steel rail with spreaders - rather than 25mm with sleepers - and bolt to the tops of concreted in steel posts. Third rails for dual gauge are 25mm sections welded to the tops of the spreaders.



LEVEL CROSSINGS



If you have a track crossing a path or driveway it may not be practical to cut the concrete and set it in. MTS makes "speed hump" style crossing tracks to solve this problem allowing vehicles to pass over the track without damage to either.

Raised Service Track	5" Gauge	5" + 3 ½"	7 ¼" Gauge	7 ¼" + 5"
Straight 1.5m	\$157	\$199	\$178	\$229
Curve 10m/7.5deg/1.3m long	\$189	\$236	\$210	\$257
Buffer Stop	\$125		\$145	
Post	\$130			
"Speed Hump" Level Crossing	5" Gauge	5" + 3 ½"	7 ¼" Gauge	7 ¼" + 5"
Straight 1.5m	\$262	\$325	\$283	\$330
Straight 3.0m	\$477	\$577	\$514	\$598

SIGNALS

COLOUR LIGHT SIGNALS

The MTS colour light signal range includes both two and three aspect versions. These can be mounted as single units on posts or gantries or as double units as per Sydney Suburban or Victorian/SA double light styles.

Standard Features:

- Generic design approximately ¼ full size
- High efficiency LED lights
- Dim function for night time operation

Light Options:

- Marker Lights
- "Calling On" Lights
- Turnout Indicators
- Route Indicators

Control System Options:

- Manual operation
- Trip/Latch system
- Fully Automatic
- Control systems quoted and designed to suit your needs



Basic 2 Aspect Signal Head \$395 3 Aspect Signal Head \$495

Options and control systems: by quotation.

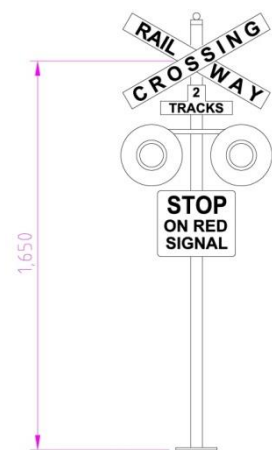
LEVEL CROSSING SIGNALS

Our level crossing signals are a generic design that captures the image of the vast range of signals installed all over Australia.

- The signals are approximately ½ of full size and are ideal for driveways, etc., where clear visibility is required from vehicles.
- All feature LED lights and run on 12V.

The controller can drive from continuous insulated track or small trigger sections or switches.

The signals and signs are designed to fit to a 50mm galvanised pipe fence post, which is included.



Full Light Set on Post with basic sign set \$550

"2 Track" Sign, add \$ 50

Controller \$295

1.5m Straight Trigger Track Single Gauge - \$250 Dual Gauge - \$300

BUILD YOUR OWN TRACK

When it comes to track, most of our customers buy complete sets from us however some just buy points or points and curves and build the rest themselves.

We have a range of tools and parts available which make it easier to get your track building right and at the same time make it easily compatible with MTS track when you buy complete points and sections from us to start out or finish things off.

Equipment You Will Need

The minimum workshop tools you need to build track are:

- A welder. Stick is OK but you'll kick yourself if you don't buy a proper MIG (with gas).
- Metal cutting band saw: To cut rails and sleepers to length. Buy a good one – and spare blades!
- Bench Grinder
- Angle Grinders x 2
- Bench Drill
- Battery Drill
- If making curves you'll also need a Bar Roller
- Range of G-Clamps
- Gauge bars to hold the rails in gauge during welding (included in our kit)
- Jigs to hold the rails and sleepers in place while welding

Track Building Toolsets and Parts

MTS track building tool sets include:

- For each gauge chosen:
 - 10 "Straight" (ie in-gauge) gauge bars
 - 10 "Curve" (ie 3mm over-gauge for curved track) gauge bars
 - 2 "Intermediate" (ie 1.5mm over-gauge) gauge bars
 - 1 each of the above modified for difficult positions
- 1 Rail Hole drilling jig
- 1 Rail Joiner positioning jig
- 6 sample MTS Rail Joiners to get you started
- Instruction Booklet covering build standards and construction techniques

Prices

Track Building Toolset - Single Gauge \$250
(Specify 10mm or 12mm wide rail for 5" gauge, 7 ¼" 12mm wide is standard)

Track Building Toolset – Dual Gauge \$325
(Select 10mm wide rail for 5" + 3 ½" and 12mm wide rail for 7 ¼" + 5")

Rail Joiners Pack of 50 \$160

Please note that all of these parts are quite heavy so freight costs can be significant.

Section 6: Control Systems, Parts and Accessories

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Bogies - Standard and Motorised

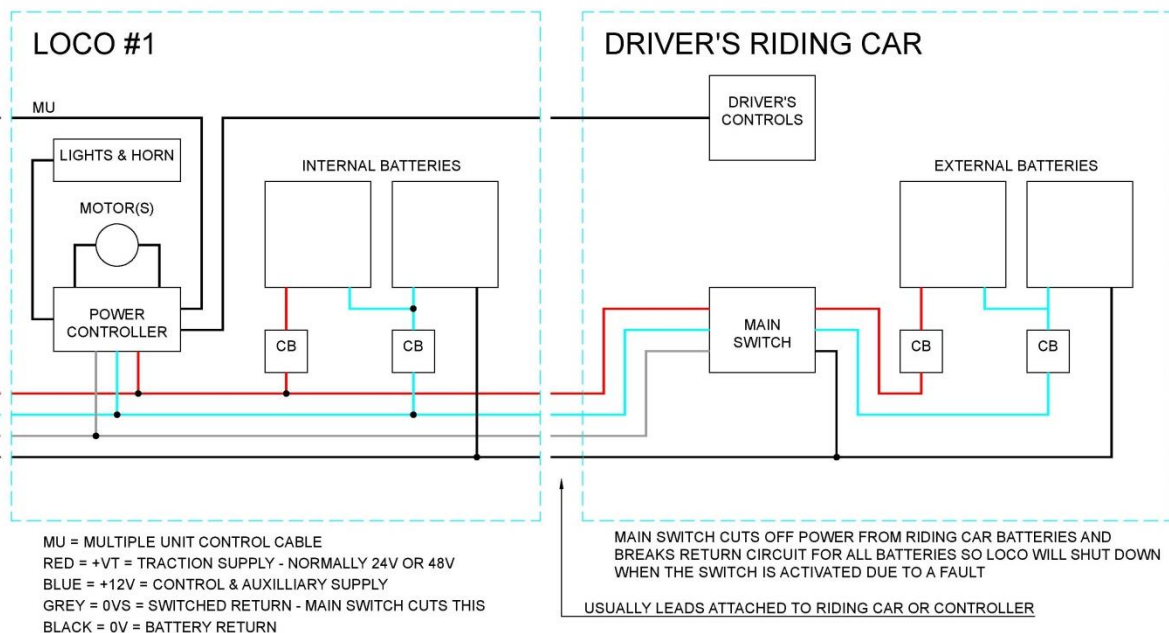
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Couplings and Coupling Bars

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ELECTRIC LOCO SYSTEM OVERVIEW

Before going in to details about specific products, it's best to have a quick overview of what comprises an electric loco for those who are new to this part of our hobby.

So what makes up a Power Control System? Essentially a battery, a motor and some sort of device that fits between the two for control.

Even the fine details aren't that complicated, but not necessarily obvious. For example you need circuit breakers on your batteries to protect the wiring if there is a short circuit fault, and the Power Cut-Off switch on your riding car needs to be wired so that the loco can be shut down in a fault, even if it has internal batteries.

This sub-section goes over some of the finer points for those who are interested.

Operating Voltage

Battery electric locos are all about electrical efficiency – keeping heat losses to a minimum. It's all about the amps: Keep the amps down and you keep the efficiency up.

In modern electronic power controllers the losses are largely current related, so because running on a higher voltage means lower amps for the same power, you go for a higher operating voltage if you can.

For the same power a 24V loco uses half the amps of a 12V loco of the same power, and a 48V loco uses just a quarter. Not only that, to carry the same amount of power without the cable heating up too much, the wire on a 12V loco needs to be SIXTEEN times bigger than on a 48V loco pulling the same load.

The downside of going for a higher voltage is that of course you need more batteries. With higher powered locos you're going to need multiple batteries anyway to get the range capacity, so it makes little difference what the operating voltage is.

On MTS locos, and our recommendation to people building their own locos, we select the voltage based on the power of the loco:

Up to 250W 12V

Small 5" gauge locos like the Planet that can typically pull one passenger car and are intended mainly for play.

Up to 1kW 24V

Medium sized 5" gauge passenger haulers, like our 48 class, which can pull up to about 4 passenger cars depending on track conditions

Over 1kW 48V

Larger 5" gauge "heavy haul" and most 7 ¼" gauge locos.

48V is a practical limit in most cases for home builders and is well below the voltage where electrical certification is required.

Batteries

You can simply use car batteries and they will work fine for a short time. They are designed to start cars using hundreds of amps for a few seconds before being immediately re-charged, but for trains you steadily discharge at tens of amps over several hours then recharge overnight. You simply don't get the daily operating hours and calendar life out of car batteries.

You should always use "Deep Cycle" batteries which are designed for backup power and traction applications. They can cost more, but over their operating life they usually wind up being cheaper and they are certainly better to use on a daily basis.

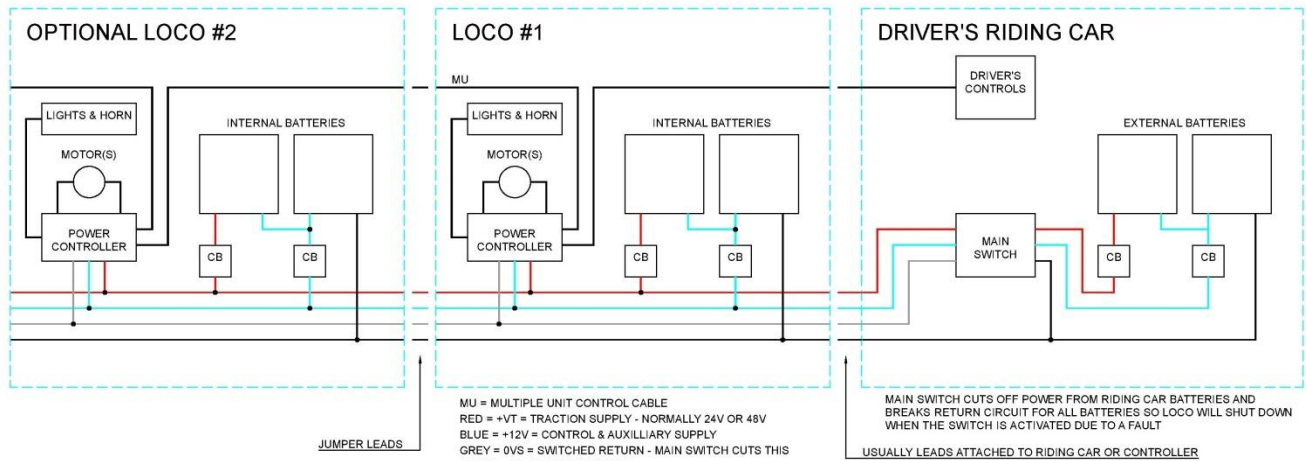
Battery technology is changing rapidly but for the past several years the best and most effective deep cycle batteries for our applications use AGM technology. These are a special gel type battery which have a high capacity for their size, need no maintenance and offer very good cycle life.

Like all batteries, the life of an AGM battery depends on how it's treated and MTS power PS7D power controllers monitor battery voltage to minimise the risk of life reducing over discharge.

Motors

Over the past ten or fifteen years in particular, due to market growth in mobility scooter, electric bicycle and small electric vehicle markets, compact, high powered permanent magnet DC motors have now become very cheap, compact and practical.

Many early electric model locos were built with older technology series-wound motors, usually modified Lucas C40 generators. These motors can be an issue to repair and lack the power and flexibility of their modern permanent magnet counterparts so are rarely if ever used on new locos.



Power Controllers – and MU Operation

The Power controller by definition controls the power from the batteries to the motors. MTS models include selectable current limiting for motor protection, battery monitoring for battery life maximisation and full Multiple Units (MU) functions so that two or more locos can be coupled together and operated by the one driver, just like the full size!

Modern electronic controllers use a pulse control system for driving and braking. The old resistor controllers are no longer used in new locos because of their lack of flexibility, high losses, size and cost as well as their general lack of suitability for use with modern permanent magnet motors.

MTS power controllers also include outputs for auxiliaries like headlights and horns plus interface connections for typical sound systems – all integrated with the MU Control.

Driver Controls

The actual controller the driver operates is usually separate from the Power Controller itself for safety, efficiency and convenience, and plugs into the loco to operate it. In the MTS system you can use either a simple hand held controller, that covers all of the basic functions and includes throttle and brake controls, or you can use a driver's riding car mounted control panel, which has extra features and functions.

In either case, hand controller or control panel, you just plug it in to the loco and go. The MTS systems automatically works out which end the control is plugged in to, ensures that "forward" is always the direction away from the driver regardless of which way the loco is oriented and makes sure that all locos connected in MU all run in the same direction!

Unlike some systems, MTS provides separate throttle and regen brake controls so that you can let your loco coast when you want to and apply just the amount of braking you want at any time, rather than using automatic, and sometimes unpredictable, single knob auto braking (ie. anti-coasting) controls.

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All MTS Driver's Controllers include key operated power switches for safety and security. If you have more than one controller, hand or control panel, we can "common key" for no extra charge.

Deadman Option

MTS Control panels and driver's seats can be fitted with a "deadman" system where if the driver gets off, or more importantly falls off the riding car, the control system shuts off the throttle and applies maximum regen braking to reduce the chance of run-away accidents.

Auxiliaries

MTS Power controllers include outputs for front and rear headlights and horn, as well as a switched power outlet and a 0-12V throttle signal for use with common sound simulation systems. The MU system ensures that when you are running locos in MU, the only headlight that comes on when you turn on the switch is the one on the front of the leading loco, which is also the only one that will sound its horn. The sound system outputs are active on all locos, though, as they should be.

When using our control panel you also have access to four additional auxiliary outputs when you add our Auxiliary Expansion Module into your loco. These can be used for pretty much anything you like – extra lights, special sound system functions, extra horns, maybe even pantograph controls!

These outputs are factory programmed as "on/off" circuits that work on all locos, however if you let us know what you want we can specially program one or more channels to be pulse outputs and/or disable when the loco is not the lead engine and/or be running direction dependent. Just let us know what you'd like and we'll see what we can do!

PS7 POWER CONTROL SYSTEM

Our PS7 Control System has continued to evolve with regular upgrades bringing new and improved features while maintaining a high level of compatibility with previous versions.

This catalogue sees the release of the new PS7D version, whose enhancements include a "no hassles" version of the 12V PS7D-Lite as used in our 5" gauge Planets, "Sound System Ready" features throughout the range, and simple connection from the PS7D-Plus model to our new fully programmable Auxiliary Controller.

Power Controllers

We keep it simple with just two models to choose from:

PS7D-Lite – for small 12V Locos

\$295

Designed specifically for use in Planet's and Brush locos but can also be used in other 12V locos up to around 300 watts. Simple wiring with "outside world" power connectors Included.

PS7D-Plus – for all locos – 24V, 36V or 48V

\$395

For general use with automatic voltage detection and suitable for up to 3kW when running on 48V

Includes interface cable to connect directly to our Auxilliary Expansion Module

MINI TRAIN SYSTEMS PTY LTD

Driver's Controls

PS7HC Hand Held Tether Controller \$150

- Throttle, Brake and Direction controls
- Power, Brake and Alert indicators
- Horn button, Headlight Switch and Auxiliary output control – usually used to switch Sound Systems on or off
- Removable key for security



PS7CP Control Panel \$400

Includes all of the hand controller features plus:

- Amp Meter to show engine loading
- Battery Charge Meter so you know how your batteries are lasting up
- "Brake" and "Drive" mode indicators
- Neutral position on the direction switch – Brake indicator flashes in Neutral
- Pilot light for the headlight circuit
- Dim switch to reduce the brightness of the indicators for night running
- Switches for 4 extra Auxilliary functions



Options and Accessories

Control Panel Options

Deadman Option – requires seat or foot pedal switch	\$150
Seat Pressure Pad for Deadman	\$ 50
Dual Ammeter/MU Cable version for motorised riding cars	\$100
(Enables motorised riding car amps to be monitored independently of the attached loco)	

MU Cable Sets

MU+Power for 12V/24V with 4pin Power	\$150
MU+Power for 24V with 6pin Power	\$170
MU + Power for 48V with 6pin Power	\$170
MU + Power for 48V with 8pin Power	\$190

Driver's Car Cable Sets

Each includes Power Cut-Off Switch, Circuit breakers for 12V, 24V and 48V as the case may be. There is also an un-switched 12V circuit breaker to power tail lights and in the case of 24V and 48V systems, for brake pumps or compressors.

When used with correctly wired locos, this Power Cut-Off switch will shut down a faulty loco even if it has internal batteries, while still providing power to tail lights and brakes.

12V 32A with 4pin Power Connector	\$225
24V 32A with 4pin Power Connector - 12V rated to 25A.	\$275
24V 63A with 6pin Power Connector (heavy duty version), 12V rated to 25A	\$300
48V 63A with 8pin Power Connector, 12V rated 25A, 24V rated to 32A	\$350

MTS standard power connectors are upward compatible with different voltages. 12V and standard 24V systems use the same 4 pin connector with extra pins added for heavy duty 24V and different heavy pins added for 48V. Wrong voltages cannot be plugged in to each other, but you can plug a 4pin 12V or 24V loco into a 6pin 24V or 8pin 48V loco in MU and have power passed through correctly.

BATTERIES AND CHARGERS

We use and recommend quality Remco 12 volt AGM Deep Cycle Batteries and can offer the entire range, however these are some of the more common ones used in our trains.

RM12-55DC	55 amp hour	229x138x214	\$235
Used in sets of four as internal batteries in our 2170/2400 and 81 class models			
RM12-75DC	75 amp hour	259x165x208	\$375
The standard battery we use in pairs or fours in most driver's riding cars			
RM12-100DC	100 amp hour	304x165x208	\$410
High capacity battery, normally used as the only battery on small 12 volt locos or in multiples for greater range in larger locos.			

It is always important to try to select the right battery for the load and daily running time you want for your loco. We're happy to give you the best advice we can based on our 40 plus years experience with building and operating electric locos.

We offer two different chargers, each fitted with cables set up to plug straight in to your batteries for charging in-loco or in-riding car.

Standard – 10 amp Intelligent Charger	\$140
Recommended for 12V and most 24V locos	
Heavy Duty – 20 amp Intelligent Charger	\$295
Recommended for all 48V systems.	

MOTORS

MTS has standardised on two motors based on power, voltage, size and practicality. All motors are sold with a 3/8" BS chain sprocket and plug-in power connectors fitted. Other sprockets sizes and alternative tooth counts available to order.

48V 1kW Direct Drive Motor **\$250**

This is a heavy duty motor which requires gearing down to get to the right speed to drive the loco wheels, so it's best suited to larger locos. Standard 12t sprocket.



24V 450W Geared Motor **\$160**

We also have a 450W 24V geared motor which has the advantage of being both compact and having a very useful shaft speed: Gearing 1 to 1 from motor to axle gives about 9km/h on a standard 5" gauge diesel wheel "light engine"! It's usually simply a matter of using a smaller motor sprocket to get the speed right for bigger wheels, and if you want more power put two or more motors in. If you want 48V you can gear two motors together and wire them in series for 48V no problem.



BOGIES – STANDARD AND MOTORISED

5" Gauge Sandberg Bogies

We have standardised on the popular Australian Made Sandberg bogies for almost all of our passenger cars and freight wagons.

Our versions of these bogies feature all steel parts (that might rust), painted in black epoxy paint (not in photo for clarity) and an extra strong pivot pin with R-Clip retention to your wagon.



Wheel Dia. 90, Wheelbase 190, Carry Height 110

Standard Un-braked	\$420
With Mechanical Brakes	\$475
With Vacuum Brakes	\$575

MTS 5" K-Type Power Bogies

These are based on the Sandberg bogies and use many common parts. They have the same mounting height and will fit in many of the same places as an un-powered bogie. They feature a 450W 24V motor geared to run at around 9.5km/h unloaded.



Wheel Dia. 90, Wheelbase 190, Carry Height 110

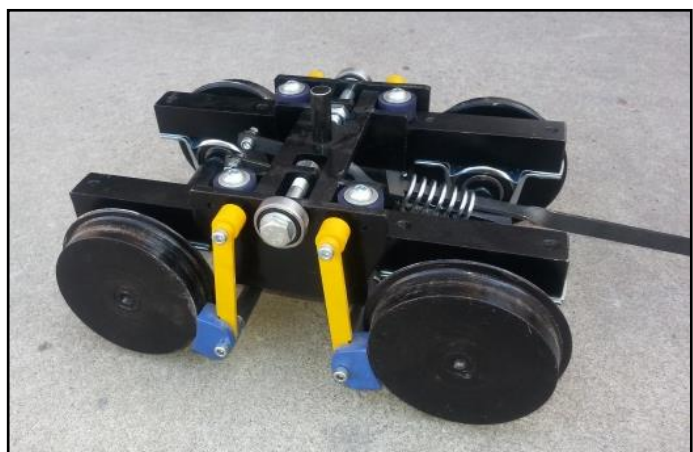
K-Type Power Bogie – Un-braked	\$800
K-Type Power Bogie – Mechanical Brakes	\$850

MTS 7 ¼" H-Type Bogies

These are our most economical 7 ¼" gauge bogies. They are inside framed to suit Mk2 straddle cars.

Wheel Dia 90, Wheelbase 200, Carry Height 120

Un-braked	\$625
With Mechanical Brakes	\$750



MTS 7 ¼" H Bogie – Mechanical Brakes shown

MTS J-Type Power Bogies

These are based on our successful "H" type passenger car bogies but have a longer wheelbase and larger wheels so have a higher bolster mounting height. They are fitted with a 1kW 48V motor geared to run at around 10 km/h unloaded.

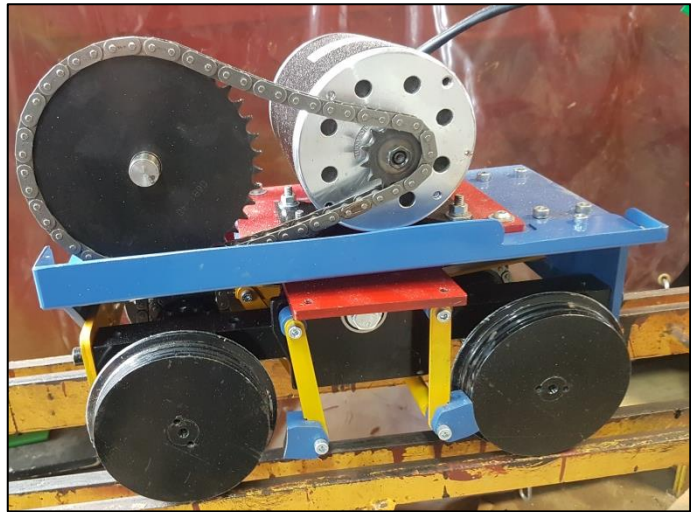
Wheel Dia 110, Wheelbase 238, Carry Height 125. Includes bolster plate.

Un-braked	\$1225
With Mechanical Brakes	\$1350

Also available:

HL-Type Un-braked Bogie	\$650
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This is an H-Type unpowered, un-braked bogie, but with the same extended wheelbase as the J-Type bogie and the same larger wheels. Most commonly used as the front (unpowered) bogie in a 1kW powered riding car.



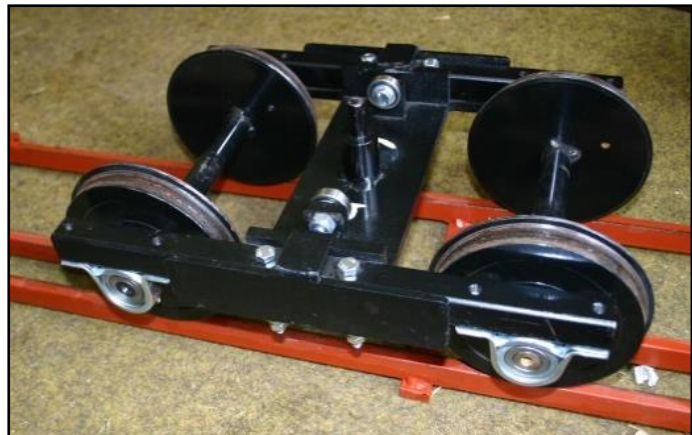
MTS 7 1/4" J Bogie – Mechanical Brakes shown

MTS G-Type Bogies

These are our standard passenger car bogies as used in our enclosed passenger cars. Developed, tried, tested and proven over twenty years of commercial operation, these are mechanically simple, solid and reliable.

Wheel Dia 140, Wheelbase 300, Carry Height 140

Un-braked	\$ 650
With Mechanical Brakes	\$ 800
With Air Brakes	\$ 990



MTS 7 1/4" G Bogie – Un-braked shown

COUPLERS AND COUPLING BARS



7 1/4" Gauge Couplers

MTS produces a range of couplings and coupling bars for both 5" gauge and 7 1/4" gauge locos and rolling stock.

Couplers are the "duck bill" style, available in one and two slot versions to bolt directly on to buffer beams. They come complete, welded together and painted in black epoxy paint.

5" gauge coupler bars are laser cut from 6mm plate steel and come in various lengths.

The 7 1/4" gauge versions are made from strong 32x8mm steel bar stock.

In accordance with AALS recommendations 5" gauge couplers and bars are designed for 6mm diameter pins and the 7 1/4" gauge versions for 10mm diameter pins.

Couplers	5" Each	Pair	7 1/4" Each	Pair
Single Slot	\$30	\$50	\$30	\$50
Double Slot	\$40	\$65	\$40	\$65

5" Coupling Bars

Short (100mm hole centres)	\$5
Medium (150mm hole centres)	\$6
Long (200mm hole centres)	\$7

7 1/4" Coupling Bars

Short (150mm hole centres)	\$10
Medium (225mm hole centres)	\$12
Long (300 hole centres)	\$14



Laser cut 5" gauge coupling bars. 7 1/4" gauge bars are made from bar stock so have squarer ends.

STORAGE AND TRANSPORT SYSTEMS

If you are transporting your loco to and from the club, or visiting around and about rather than storing permanently on track on your own private railway, then you need to be set up properly for storage and transport.

MTS builds a wide range of storage trolleys to suit your needs: Single and double deck with heavy duty locking castors.

5" gauge, 7 ¼" gauge and dual gauge trolleys are available with buffer stops at one end and loading ramp connections at the other. Coupling connections are fitted to the buffer stop and these can be fixed height or adjustable height if you swap things around.



Double decker 7 ¼" with heavy driver's car on the bottom and loco and booster on the top).

We also manufacture and fit tracks to trailers, as well as connecting ramps to get from the trailer to and from your trolley.

Construction uses light weight rectangular tube for rails and 50x6mm sleepers and cross bars bolted into the trailer frame.

These systems are all custom built to fit your needs but are not expensive for what they do.

Section 7: Business Information and FAQ's

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ABOUT MINI TRAIN SYSTEMS

MTS started in 2010 as a spin-off from The Train Shed, the former Thomas the Tank Engine children's amusement park that operated in Luddenham in Western Sydney from 1998 till the start of work on Badgerys Creek Airport in 2014. Earlier roots go back to the Powerline Model Railway Centre from 1994-1996 and to club membership and private loco building starting in the mid 1970's.

The Train Shed featured 7 ¼" gauge electric powered locos ranging from "Percy" (about a metre long) up to "Gordon" (about 2.8m long) in size, and rolling stock designed and built by us to meet strict licensing requirements and commercial safety standards. Just as importantly they had to make us a living and that meant that above all else they had to be tough and reliable as well as easy to operate, maintain, and repair.

With over 40 years of club involvement and over 20 years of commercial construction and operation, we have established a business unique in its ability to design and build locos, rolling stock, track, and complete railways: Everything you need to operate in a club, have your own railway at home or operate a commercial miniature railway.

We can do as much or as little as you want, at all times listening to what you're saying and providing honest and impartial advice and suggestions.

A Train to Suit You

We aim to make sure that you get the best train we can build for the purpose you want to use it for, and most importantly that it's a train you like and enjoy running.

For that reason we have a whole range of locos and carriages to suit a range of uses and budgets.

It is to some degree a matter of "horses for courses". "Starter" locos are great for running at home or on club "play days", but may not have the power to pull larger passenger loads on public club running days. Conversely, some bigger locos may not be able to get around very tight backyard curves. You can have a loco that will do both, of course, and we can give you advice to inform your choice.

The same applies for carriages: We have straddle (or "sit astride") carriages of various lengths for backyard tracks and 5" gauge club track running, but recommend our 7 ¼" gauge enclosed sided carriages for added safety on all 7 ¼" club and commercial tracks and, when practical, on home 7 ¼" gauge tracks as well.

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If you want to build your own carriages, or already have some, then we can also help you with bogies and wiring sets.

Keeping in mind your budget and the fact that you can start small and build up over time if that's what you want to do, start out by deciding what style of loco you like. Then it's a matter of where you want to run, how steep the track is and how much you want to pull.

The tighter radii we see in residential private tracks (as opposed to rural blocks) means that larger locos may not be practical, though it can be surprising how tight a curve our locos will get around. At clubs the tracks have bigger curves but you need to be able to pull more to do the right thing on public running days and that pushes towards larger locos.

Even if the loco you like and can afford does not quite have the power you need, we now have powered riding car options to boost your pulling power very economically. If you take a typical large Maxitrak loco for example, because you love the look of it and they run so smoothly, you're probably able to pull two cars on lightly graded track. If that's not enough or the track is steep, adding one of our 5" gauge powered riding cars easily doubles your power for only a small extra cost.

If you're running at a club then the club usually owns the carriages and you just need to make sure you can couple up to them. Where train braking is required we have control systems for both the usual vacuum system used on 5" gauge and the air system common on 7 ¼" gauge. We now also have electrically operated mechanical train brakes where that's the right choice for you.

For commercial operation we'll consult with you and give you our best advice based on personal commercial experience to allow you to make informed choices.

FAQs

How do I Pick between 5" and 7 ¼" Gauge?

In short it depends on where you're running and what you want to do. If running at a club you can make a choice based on what works best at your favourite club, while running commercially it will definitely be 7 ¼" gauge.

All other things being equal, if you're running at home, the cost of track per metre doesn't differ much between the two gauges, it comes down to the size of the curves, the steepness of the track and how much you want to pull. 5" gauge is best for lighter loads and tighter curves and enables you to get started with a cheaper train and a smaller track. 7 ¼" gauge, where you've got the space, is better for steeper tracks and heavier loads, but your starting point budget comes in a bit higher.

What's Special about MTS Trains?

We have 40 years of experience designing and building electric locomotives, initially for our own hobby use and since 1994 for commercial operation and for sale to families, rail fans and commercial operators. That experience shows in our designs in the toughness, durability and simplicity of maintenance in all of our products.

MINI TRAIN SYSTEMS ^{PTY} _{LTD}

Everything we build, and especially the new designs, is properly tested in real world conditions before being delivered to the customer.

MTS is probably the first manufacturer of 5" gauge electric powered detailed scale models of Australian Diesel Locos.

How are Maxitrak Locos that are sold by MTS Different?

Mini Train Systems own branded locos are 100% designed and built here in Australia by us based on our decades of experience and to suit Australian operating conditions.

That puts us in an ideal position to market and support locos made by our friends Maxitrak in the UK. We have more demanding operating conditions here and that essentially means more battery capacity and heavier duty Power Control Systems. We take a wonderful model and make it just that bit better for you to enjoy. In many cases we include items that are optional in the UK as standard for locos sold in Australia,

For those considering privately importing models from other manufacturers overseas, the convenience, safety, warranty support and peace of mind of buying from an experienced local manufacturer should not be undervalued.

Does MTS only make Battery Electrics?

We have hobby experience operating steam locos and petrol/diesel powered locos, but honestly electric power is what we do best and that is what we concentrate on. Electric power gives you the best in safety, reliability, performance, economy and convenience and doesn't generate toxic exhausts, cinders or excess noise and heat.

If you want to pursue steam loco options further however and you are a member of a AALS affiliated club we can point you in the right direction for local loco builders or (after pre-checking for compliance) specially import Maxitrak steam locos.

Of course if you love the look of steam locos but don't want the down-sides or cost, we can help you with our range of steam-outline electric locos.

Regardless of loco technology, our track and carriages are standardised and will work with just about any other manufacturer's equipment.

Can I buy the Train in kit form and/or unpainted?

In many cases, yes you can.

Mini Train Systems are specialists in Ready-To-Run, reliable and warrantied battery electric locos. Our locos are designed to be factory built and finished using special jigs and industrial manufacturing processes and are therefore not really suitable for sale as kits.

However if you want to add the personal touch and say "I made this" then a number of our Maxitrak sourced locos (now including the Planet) are available in painted or unpainted kit form as well as ready to run. The MTS power control system upgrade components are included in these kits as well.

How are MTS Power Control Systems Different?

There are a wide range of power controllers available on the market, some purpose designed and some adapted from designs intended for electric bicycles or mobility scooters.

Few, if any, provide the combination of features and benefits designed into MTS controllers, such as:

- Independent Regenerative Braking: Some other controllers also have a regenerative brake, where the motors act as generators, putting power back into the batteries to slow the train down. Unfortunately most controllers do this semi automatically as an anti-coast brake, which is not what drivers actually want. MTS controllers have separate brake and throttle controls so you can power up, coast along when you want to and when you want to slow down, in our case almost to a stop, you control it exactly how you want.
- A choice of hand held driver's controller or a full function control panel with meters and extra functions. It doesn't matter which type you plug into which loco, all the standard functions work the same.
- Battery Monitoring and Protection: The PS7D Power Controller monitor the off-load voltage on your batteries and as they go flat starts flashing a warning light. When they get too low the control system, after plenty of warning time, shuts the loco down to minimise the risk of battery damage.
- Automatic voltage detection: PS7D Power Controllers automatically detect 12, 24, 36 and 48 volt systems and adjust their internal settings accordingly. Most other controllers are either strictly 12 volt or strictly 24 volt and few allow for the advantages of higher voltage operation.
- Simple switch selection of current limiting levels to suit the motors in your loco.
- In built MU ("Multiple Unit") system: This allows two or more locos to be coupled together and driven by the one driver for more power. We can even do "distributed power systems" like full sized electric trains with more than one powered carriage or loco and making it possible to drive the train from either end.
- PS7D Power Controller now include a 0-12V throttle output for interfacing to popular sound simulators. This means that the diesel sound system responds to the throttle position, as it should, rather than to the motor speed, and reacts correctly to coasting and braking.
- MTS Control Systems are designed and built by us right here in Australia. In the unlikely event of you having a problem you're talking to the right people straight away.

Can I MU my loco with one made by another company?

If you fit one of our control systems to the other loco, yes you can.

Control systems made by other manufacturers may not be capable of MU operation, or the operator interface or connector method may not work well with multiple locomotives.

If you have a loco already, we can talk to you about converting it to our MTS control system, to take advantage of the MU system and other feature benefits. Talk to us about it!

Can I put an MTS Control System in another loco?

Yes you can.

MTS control systems suit a wide range of motor power ratings and operating voltages. Let us know what you have and we can suggest options for you from our range for you to install or we can do the installation for you. Many older second hand locos are fine mechanically but are let down by their control systems: We may well be able to help your phoenix to rise.

What sort of Batteries Should I Use?

Always use Deep Cycle batteries as opposed to car batteries: While more expensive, Deep Cycles are designed for traction use rather than engine starting. For the same nominal amp-hour capacity they'll give you longer running times each day, a greater cycle count and a longer calendar life.

After a couple of decades running wet lead acid deep cycle batteries commercially and privately, we have now switched over completely to AGM batteries.

These are a special gel type no-maintenance spill-proof lead-acid battery with a higher charge density (amp hours per volume) than wet batteries and are well worth the extra.

While you *can* run your train on cheap car batteries, once you've used AGM Deep Cycle Batteries you'll understand why money spent on the right batteries is never wasted.

How long will my train run?

We select batteries to suit your operating conditions and required run times. Most of the time this is for a full day of public running.

The standard packages offered have enough capacity to run for five or six hours under typical operating conditions and loads. Heavier loads and steeper tracks will of course impact that and there are a number of options for larger batteries and extra battery packs should you need them.

Can MTS build something special that's not in the catalogue?

Yes we can.

We regularly build special products for customers. Sometimes these remain as one offs, like special carriages or site specific track sections, and at other times they get turned into regular catalogue items, which is how many of our new locomotive designs have come about.

Understandably the lead time for a special design is usually much longer than for standard existing products but of course the benefit is that you get exactly what you want.

Can I make my own track?

Yes you can.

We make a range of track building toolkits, which include instructions and assembly hints that guide you towards making strong and durable track compatible with track that you buy from us ready-made.

The majority of our customers buy all of their track ready-made, but some choose to make some or all of it themselves. If you have the time, skills and equipment then straight track is relatively straight forward to build once you have made a jig. Curved track is more complex and requires extra equipment (a bar roller for a start) and accurate jigs made for each radius required.

Most people leave the points to us, even if they're making all their own straights and curves. If you only need a few points, it's quite an art to get them right and it's a long and rocky road to go down if you haven't done it before. We've made hundreds of them; have decades of experience and all the right jigs so we can save you a load of heartache.

This is particularly true with clubs, where members may feel comfortable building their own running lines but prefer to take advantage of our skill and experience as far as the points go.

Why does MTS paint its track?

Where the steel has been welded and/or ground it is more susceptible to corrosion and that's the main reason we paint it: to slow down corrosion.

Standard treatment is painting all over with red oxide primer. In high corrosion areas we offer the option of an undercoat in primer mixed with the recommended concentration of Penetrol. Where we have to match appearance with unpainted track then you also have the option of spray painted black epoxy.

Of course many people leave their own-built track unpainted and as long as it is kept well drained and you don't mind the rust marks, it will stabilise. You just have to look after it.

You can save some money with MTS straights and curves by buying them unpainted and painting them yourself, or letting them weather as they are. Points are not sold unpainted.

Can MTS make Special Points?

Yes we can.

Sometimes your layout needs something special that isn't covered in our current list. The 14m and 18m radius points as well as the double slip, came into our range initially to meet the needs of specific customers.

If you need something special and it's practical to make, then we're happy to quote for it, usually including a jiggling charge for the first one. Some items, like dual gauge three way or double slip points are expensive, but we may well be able to come up with a cheaper design solution for you if that becomes a problem.

We also do specialised sleeper webs for our points specifically for clubs that use timber or plastic sleepers under the steel plates.

I'd love a track at home, but it won't fit!

That's just setting us a challenge!

Not everyone can have acreage and modern back yards are getting smaller, but that doesn't mean you can't have your own railway at home. Our Planet locos will go right down to 2.5m radius curves and many others in our range will go down to 3.8m radius. And of course your track doesn't have to be an oval: It can be an "end to end" design. You can twist and turn and go from one end to the other rather than round and round.

We've been doing this for years and it still surprises us what can be achieved, so don't abandon that dream before you talk to us.

Can I modify my MTS product after I have received it?

Of course you can.

Many people like to personalise their models and we encourage it. Just remember that any changes to mechanical or electrical systems not done by MTS will impact warranty.

Perhaps you'd like a special paint job or maybe there are specific body details you want to add. Even if you've bought your model complete, painted and ready-to-run there's no reason not to add your own special details.

Do you Deliver or do I have to Pick it up?

Either way is fine.

We are based on the Lower Blue Mountains, west of Sydney. You can call and collect by appointment; however we do deliver to most areas of NSW, Victoria and SE Queensland. Outside those areas we can arrange freight or you can organise your own carrier.

Remember we also export!

Where do you do Installations?

We install tracks anywhere and everywhere in Australia. We also export and have even done an installation on an Indian Ocean island.

We can do 100% of the installation work with our staff and sub-contractors, or work with you and your helpers, sharing our expertise to get the results you're looking for.

What Copyright restrictions apply?

The design effort and experience that we put into our products is part of our Intellectual Property. All designs are therefore our copyright and **must not be copied** by any third party without specific written authorisation. Even when we custom build a product for a customer the copyright remains with MTS as the amount charged never fully covers the time spent in design.

We permit use of our track build standards with our track building toolkits but this **does not** extend to the design of our point webs, crossings, point motors or other accessories.

What Payment Terms Apply?

All goods must be paid for in full before they leave the factory.

As most items are built to order then a deposit and progress payments are usually made over the course of construction.

Payment may be made by Direct Deposit to our account, by Visa or MasterCard (no surcharges) or by cash. If paying by cheque we have to wait for clearance before ordering any parts, starting work or releasing goods.

What are your Cancellation Terms?

The usual Australian Consumer Protection rights apply to anything purchased from MTS.

We are not like a hobby shop selling mass produced models and most of our products are custom built for each customer. You are not entitled to a refund if you change your mind after work has commenced on your project.

If you do wish to cancel for whatever reason we can supply the goods that have been manufactured up to the value of the payments you have made. Alternatively we can assist you as best we can to have the project re-assigned to another customer and in that case may be able to help in negotiating a partial recovery of your deposit.

What Warranty is Provided?

We aim to ensure you get the best product that we can make, that it runs properly when we deliver it and continues to perform for you well into the future.

We provide a twelve month warranty on all parts and labour when equipment is used as recommended. In the unlikely event that you have a problem with any of our products talk to us before attempting to fix it yourself.

Do you provide After Warranty Support, Repairs and Maintenance?

Of course we provide ongoing support for every product we manufacture. This includes electrical and mechanical repairs, track maintenance, wheel re-machining, repainting and refurbishing.

We also provide other services like track inspection and routine maintenance.

Thank you for your time in looking at our catalogue and we hope that we can be of service to you sometime soon.

In the meantime ...

See you out on the track!